Power over the Ethernet

NetWay M

PoE Managed Midspan Solution for Standard Network Infrastructure

Installation Guide

Models Include:

NetWay8M
- Eight (8) Port PoE Midspan Injector

NetWay16M
- Sixteen (16) Port PoE Midspan Injector

SECURITY
LISTED

DOC#: NETM
Rev. 052110

Altronix®
More than just power.™

Overview:

Altronix NetWay8M/NetWay16M Managed Midspans provide power and pass data for PoE compliant cameras/edge devices. Cameras/edge devices may be located up to 100m (328 ft.) from the NetWay unit. A NetWayXT repeater module can be utilized to extend the distance an additional 100m (328 ft.) for a total range of up to 200m (656 ft.). A maximum range of 600m (1968 ft.) is possible using multiple repeaters, based on camera/device port requirement. NetWay Managed Midspans are capable of supporting non-PoE compliant fixed and PTZ IP cameras utilizing NetWay1512 or NetWay3012 adapters.

NetWayM Specifications:

NetWay8M:

- Eight (8) ports of cameras/edge devices over ethernet (CAT5) cable up to a distance of 100m (328 ft.) per port.
- 115VAC 60Hz, 3 amp (NetWay8M).

NetWay16M:

- Sixteen (16) ports of cameras/edge devices over ethernet (CAT5) cable up to a distance of 100m (328 ft.) per port.
- 115VAC 60Hz, 4.9 amp (NetWay16M).

Common Specifications:

Agency Listings:

- UL/CUL Listed for Information Technology Equipment (UL 60950-1).
- UL Listed for Access Control Systems (UL294).
- CE approved.

Power:

- Unit supplies PoE output voltage (55V), and up to 30W max. full power per port. Total power: NetWay8M - 150W, NetWay16M - 300W.
- IEEE 802.3af and IEEE 802.3at compliant (PoE Plus).
- All output circuits are power limited.
- Short circuit protection.

Functions:

- Programmble PoE shutdown for each port. Utilized to reset cameras/edge devices *(see Technical Specifications pg. 5).*
- PoE manual shutdown (For UL 60950-1 applications only) *(see Technical Specifications pg. 5)*.
- Auto detection and protection of legacy non-PoE cameras/edge devices.

Features:

- LAN or laptop connection enables programming of PoE shutdown and port monitoring.
- User interface *(Fig. 5, pg. 7)*.
- Illuminated master power disconnect circuit breaker with manual reset (switch).
- Individual port status LEDs.
- IEC 320 - 3-wire grounded line cord (detachable).
- Unit can be rack or shelf mounted.
- 1U rack mount chassis for use in standard EIA 19" rack.

Accessories:

NetWay1512:

- 15W adapter for non-PoE compliant IP cameras. (For UL 60950-1 applications only).

NetWay3012:

- 25W adapter for non-PoE compliant IP fixed or PTZ cameras. (For UL 60950-1 applications only).

NetWayXT:

- PoE repeater module extends range 100m (328 ft.) (For UL 60950-1 applications only).

Installation Instructions:

Wiring methods shall be in accordance with the National Electrical Code (ANSI/NFPA70), local codes, and the authorities having jurisdiction.

NetWayM is not intended to be connected to outside plant leads. These products are for indoor use only and must be installed within the protected premises.

1. Attach mounting brackets to NetWayM unit for rack or wall mount installation *(Figs. 8 or 9, pg. 11)*. Affix rubber pads to NetWayM for shelf installation *(Fig. 10, pg. 11)*.
2. Secure the unit in a rack or place unit on a shelf as desired.
   Note: The following factors should be taken into consideration when installing these rack mount units:
   a. The unit is to be installed in a space where the maximum ambient temperature does not exceed 104ºF (40ºC).
   b. Take care to insure there is sufficient air flow around the unit and that obstructions do not impede it.
   c. When mounting units in rack, take care to avoid uneven loading which can cause a hazardous condition.
3. Set illuminated master power disconnect circuit breaker to the (OFF) position *(Fig. 1g, pg. 3)*.
4. Plug the grounded AC line cord (included) into the IEC 320 connector of the NetWayM unit *(Fig. 1h, pg. 3)*. Plug unit into a reliable earth grounded socket. When using multiple units the sum of the individual name plate ratings should not exceed the supply circuit rating. Do not Connect To A Receptacle Controlled By A Switch.
5. Connect structured cables from port marked [IN] on NetWayM to the corresponding inputs of an ethernet switch or video server *(Fig. 1b, pg. 3, Fig. 4, pg. 5)*.
   Note: All cabling and wire must be UL Listed and/or Recognized wire suitable for their application.
6. Connect structured cables from port marked [OUT] on NetWayM to PoE compliant camera/edge devices *(Fig. 1a, pg. 3, Fig. 4, pg. 5)*.
   Note: For UL294 applications, the products are to be tested as part of a complete Access Control System and in accordance with UL Listed Access Control Devices.

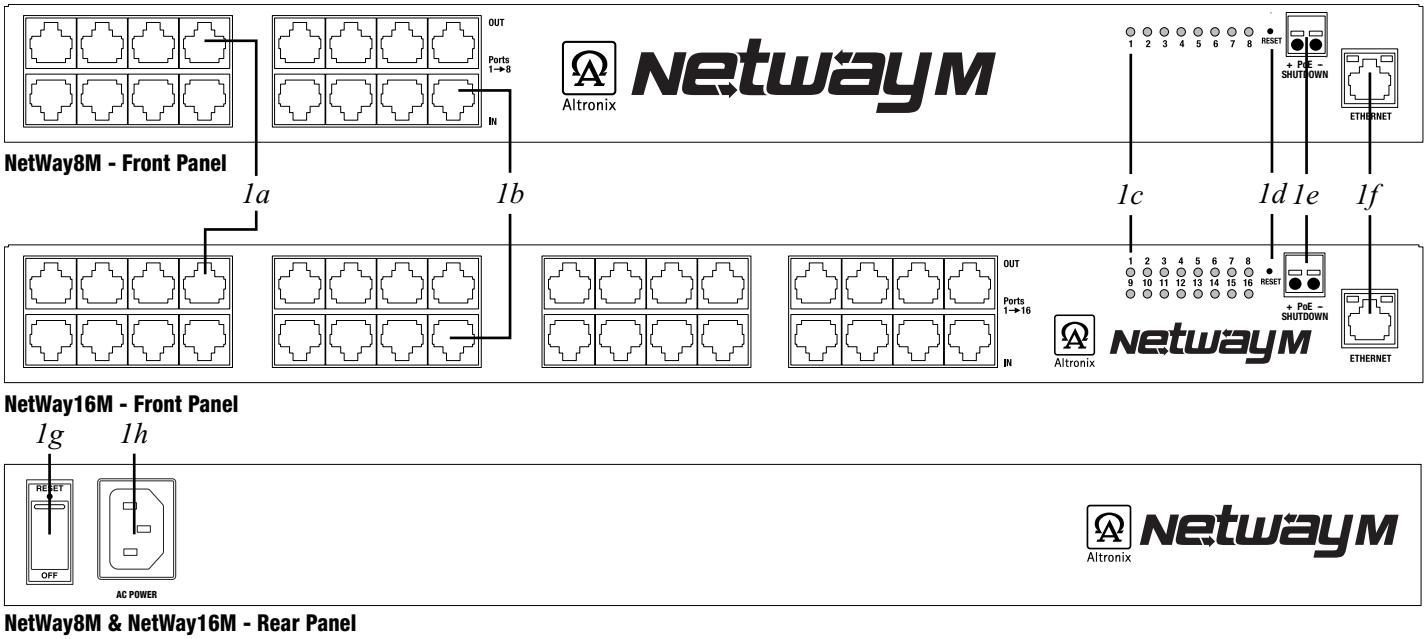
Note: All interconnected devices must be UL Listed.

7. Upon completion of wiring set illuminated master power disconnect circuit breaker to the RESET (ON) position *(Fig. 1g, pg. 3)*.
8. Port status LEDs on the NetWayM will initialize when PoE devices are connected as follows:
   - LED will illuminate when devices are IEEE 802.3af compliant.
   - LED will blink once and illuminate when devices are IEEE802.3at compliant (PoE Plus).
9. To utilize the PoE shutdown feature it is necessary to do the following:
   a. Connect a device that will provide a low voltage trigger input *(see Technical Specifications pg. 5)* to terminals marked [+ –, PoE Shutdown] on the NetWayM *(Fig. 1e, pg. 2)*. When voltage is applied, the PoE shutdown enabled PoE port(s) will drop to zero volts. Removing the low voltage trigger input at the [+ –, PoE shutdown] terminals will allow the PoE port(s) to operate normally and supply power to PoE compliant devices. Power will reset in approximately 4 seconds. Although there is no output voltage to power PoE devices during shutdown, data signals may still be present on the data pair lines of the structured cable.
   b. Individual ports must be programmed utilizing the user interface *(see User Interface and Programming, pgs. 6-9)*.

Port Status and LED Flash Codes:

Port Status	Flash Codes	Description
All Ports Off	Sequential LED Port Scan	No devices connected
Port Off	OFF	LED OFF
Port On	ON	LED ON
Class 4 detection Port	Blinks 2 times	Enables power to PoE devices.
Non-compliant Device	2Hz	Will prevent port from turning on.
Port Overload Fault	5Hz	Will prevent port from turning on.
4 Port Overload Grouped	5Hz	4 LEDs Will prevent ports from turning on.
8 Port Overload Grouped	5Hz	LED's 1-8 Power Supply Overload for ports 1-8. LED's 9-16 Power Supply Overload for ports 9-16.

Fig. 1



1a OUT 1-8 (NetWay8M), OUT 1-16 (NetWay16M): Structured cable to PoE compliant cameras/edge devices.

1b IN 1-8 (NetWay8M), IN 1-16 (NetWay16M): Structured cable to ethernet switch or video server.

1c LED(s) 1-8 (NetWay8M), 1-16 (NetWay16M): Port status LEDs.

1d Reset: Restores unit to factory settings.

1e + –, PoE Shutdown: Low voltage trigger input *(see Technical Specifications pg. 5)*.

1f Ethernet: LAN or laptop connection enables NetWayM programming and status monitoring.

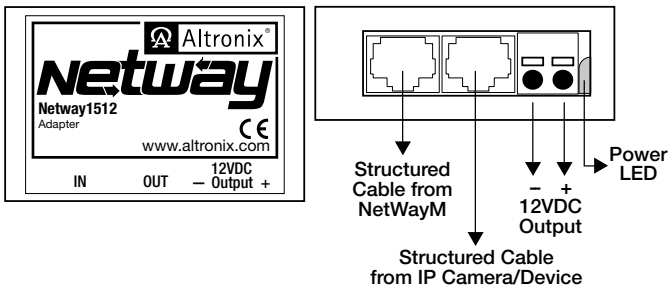
1g Illuminated master power disconnect circuit breaker (switch):
- OFF position Circuit breaker tripped Switch not illuminated.
- RESET (ON) position Switch illuminated.

1h IEC 320 Connector: 115VAC 60Hz (grounded line cord included).

Installing a NetWay1512 adapter for 12VDC IP cameras up to 13W:

1. Mount NetWay1512 in proximity to IP camera *(Fig. 2, pg. 4)*. Affix one side of velcro (supplied) to NetWay1512 and the place the second side of the velcro in the desired location.
2. Connect structured cable from port marked [IN] on NetWay1512 to any ports marked [OUT] of NetWayM *(Fig. 2, pg. 4, Fig. 1a, pg. 3)*.
3. Connect structured cable from port marked [OUT] on NetWay1512 to the IP camera *(Fig. 2, pg. 4)*.
4. Connect 12VDC output from NetWay1512 terminals marked [— 12VDC +] to the power input of the IP camera *(Fig. 2, pg. 4)*. Polarity must be observed.
5. Power LED indicator will illuminate on NetWay1512 under normal conditions *(Fig. 2, pg. 4)*.

Fig. 2 - NetWay1512



Installing a NetWay3012 adapter for 12VDC IP PTZ up to 25W:

1. Mount NetWay3012 in proximity to IP camera utilizing mounting hole *(Fig. 3, pg. 5)*. Use a proper fastener and/or wall anchor when securing NetWay3012 to the wall.
2. Connect structured cable from port marked [IN] on NetWay3012M to ports marked [OUT] of NetWayM *(Fig. 3, pg. 5, Fig. 1a, pg. 3)*.
3. Connect structured cable from port marked [OUT] on NetWay3012M to the IP fixed or PTZ camera *(Fig. 3, pg. 5)*.
4. Connect 12VDC output from NetWay3012 terminals marked [+ 12VDC —] to the power input of the IP camera *(Fig. 3, pg. 5)*. Polarity must be observed.
5. Power LED indicator will illuminate on NetWay3012 under normal conditions *(Fig. 3, pg. 5)*.

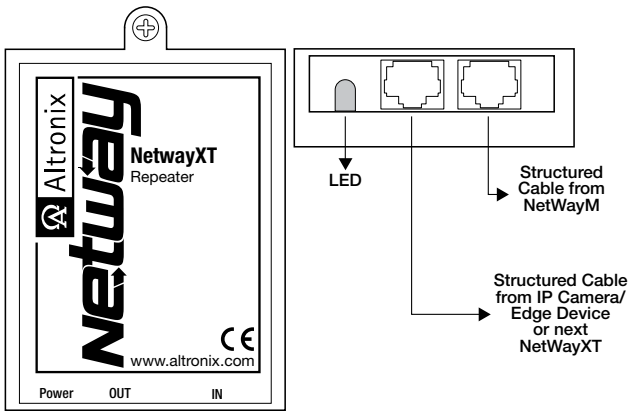
Installing NetWayXT repeater module:

1. Mount NetWayXT in desired location utilizing the mounting hole *(Fig. 3, pg. 4)*. Use a proper fastener and/or wall anchor when securing NetWayXT to the wall.
2. Connect structured cable from port marked [OUT] on NetWayM to port marked [IN] on the NetWayXT *(Fig. 3, pg. 4, Fig. 1a, pg. 3)*.
3. Connect structured cable from port marked [OUT] on NetWayXT to the PoE camera/edge device or next NetWayXT repeater *(Fig. 3, pg. 4)*.
4. Port status LEDs will illuminate on NetWayXT indicating the port is operational *(refer to LED definitions on pg. 4)*.
5. Power LED will illuminate indicating 12VDC output *(Fig. 3, pg. 4)*.

Port LED definitions for NetWayXT repeater:

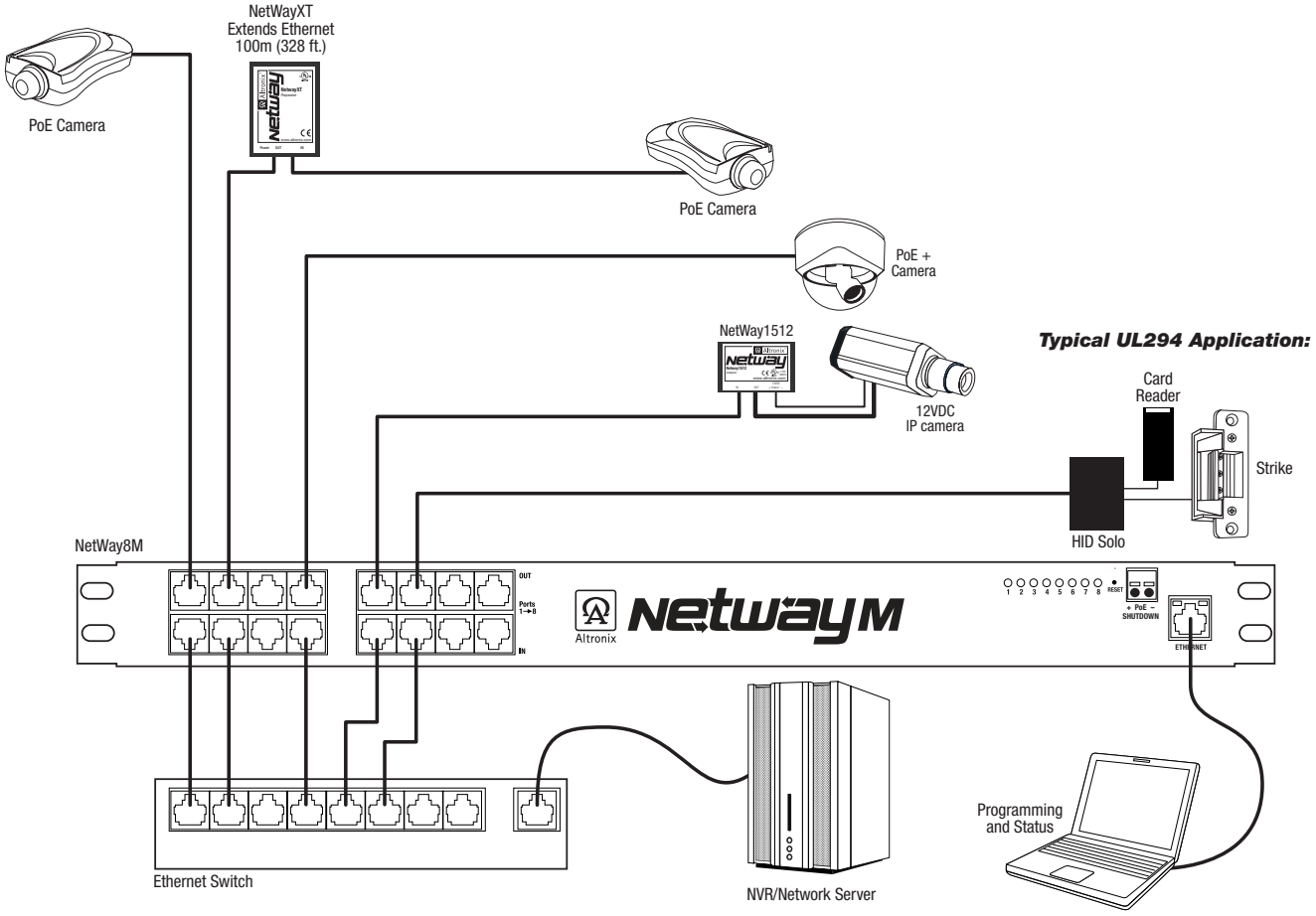
Status	Green LED	Yellow LED
OFF	Indicates it is connected as 10Base-T or no link.	Indicates no link.
ON	Indicates it is connected as 100Base-TX.	Indicates a link.
Blinking	————	Indicates activity.

Fig. 3 - NetWayXT



NetWay8M/NetWay16M Typical Application:

Fig. 4



Technical Specifications:

Parameter	**Description**
No. of Ports	NetWay8M - Eight (8) Ports. NetWay16M - Sixteen (16) Ports.
Input power requirements	NetWay8M: 115VAC 60Hz, 3 amp. NetWay16M: 115VAC 60Hz, 4.9 amp. Fuse: 4A/125V (NetWay16M has 2 fuses). **Note:** To reduce the risk of fire, replace only with same type and rating of fuse.
Indicators	Port Status LED
PoE Shutdown Voltage and Current Range	5VDC to 24VDC or 12VAC to 24VAC Minimum current: 2mA for 5VDC Minimum current for higher voltages: 10mA
Environmental Conditions	Operating Ambient Temperature: UL60950-1 - 32ºF to 104ºF (0ºC to 40ºC). UL294 - 32ºF to 120.2ºF (0ºC to 49ºC). Relative humidity: 85%, +/ ─ 5% Storage Temperature: ─ 4º to 158ºF (─ 20º to 70ºC) Storage Operating Altitude: ─ 1000 to 10,000 ft. (─ 304.8 to 3048m).
Regulatory Compliance	CE UL/CUL Listed for Information Technology Equipment (UL 60950-1). UL Listed for Access Control Systems (UL 294). CE approved

NetWay8M/NetWay16M User Interface and Programming:

Note: *A constant PC connection is not required for proper operations and is used as a local programming/monitoring tool only.*

Step 1. Set Local Area Connection of your laptop to DHCP mode.

For Windows XP:

a. Open Network Connections by clicking **Start** button, then clicking Settings, then clicking **Network Connections**.
b. Right click the **Local Area Connection**. Click **Properties**. Administrator permission required
If you are prompted for an administrator password or confirmation, type the password or provide confirmation.
c. Double click **Internet Protocol** (TCP/IP) menu item.
d. Choose the **Obtain an IP address automatically** option.
e. Click **OK**. Close all windows.

For Windows Vista:

a. Open Network Connections by clicking the **Start** button Picture of the Start button, clicking **Control Panel**, clicking **Network and Internet**, clicking **Network and Sharing Center**, and then clicking **Manage Network connections**.
b. Right click the **Local Area Connection** icon, and then click **Properties**. Administrator permission required
If you are prompted for an administrator password or confirmation, type the password or provide confirmation.
c. Click the **Networking** tab. Under this connection uses the following items, click either **Internet Protocol Version 4 (TCP/IPv4)** or **Internet Protocol Version 6 (TCP/IPv6)**, and then click **Properties**.
d. To specify IPv4 IP address settings, click **Obtain an IP address automatically**, and then click **OK**.
e. To specify IPv6 IP address settings, click **Obtain an IPv6 address automatically**, and then click **OK**.

For Windows 7:

a. Open Network Connections by clicking the **Start** button Picture of the Start button, clicking **Control Panel**, clicking **Network and Internet**, clicking **Network and Sharing Center**, and then clicking **Change Adapter Settings**.
b. Right click the **Local Area Connection** icon, and then click **Properties**. Administrator permission required
If you are prompted for an administrator password or confirmation, type the password or provide confirmation.
c. Click the **Networking** tab. Under this connection uses the following items, click either **Internet Protocol Version 4 (TCP/IPv4)** or **Internet Protocol Version 6 (TCP/IPv6)**, and then click **Properties**.
d. To specify IPv4 IP address settings, click **Obtain an IP address automatically**, and then click **OK**.
e. To specify IPv6 IP address settings, click **Obtain an IPv6 address automatically**, and then click **OK**.

Step 2. Connect a laptop or PC to the Ethernet port of your NetWayM unit. NetWayM unit should be powered up at this moment.

Step 3. Open a browser window (it is necessary to update your browser software to the latest version so that the pages display and function correctly).

Step 4. Enter the NetWayM IP address (the default IP address is 192.168.1.1) into the address bar.
Status page will be displayed.

Step 5. Click **Setup** link. Setup page will be displayed. You may now program your NetWayM.
All NetWayM units come factory set:
a. Ports - Enabled.
b. Ports - PoE shutdown Disabled.
c. Power Allocation Mode - Class restricted.

Port Priority:

NetWayM allows you to prioritize ports so that power will be allocated to the port with the highest priority first and the lowest priority last. This will ensure that ports with the higher priority will continue to operate in the event the NetWayM is overloaded. Priority is designated 1 through 8, with 1 as the highest and 8 as the lowest.

NetWay8M - Port priority is factory set at 1 through 8 for ports 1 through 8.

NetWay16M - Port priority is factory set at 1 through 8 for ports 1 through 8 and 1 through 8 for ports 9 through 16.

1. To reassign port priority select desired number from the drop down box for that corresponding port.
It is necessary to assign the port with the highest priority first and continue in ascending order.
2. Click **Submit** to save the changes or proceed with programming.

Note: Access Control Ports must have highest priority.

Port Identification:

NetWayM allows you to identify each port (ID up to 8 characters).

1. Type the desired ID into the text box for each corresponding port.
2. Click **Submit** to save the changes or proceed with programming.

PoE port setup:

Individual ports may be disabled if those ports are not used or to avoid the connection of unauthorized PoE devices.

1. To disable one or more ports click on the **Disable** radio button(s) in the PoE column *(Fig. 5, pg. 7)*.
2. To enable one or more ports click on the **Enable** radio button(s) in the PoE column *(Fig. 5, pg. 7)*.
   Note: To enable all ports click on the **Enable All** link below PoE column.
3. Click **Submit** to save the changes or proceed with programming.

PoE port shutdown:

Individual ports may be set for PoE shutdown. PoE shutdown affects only enabled ports and only occurs when a trigger input is applied to the PoE shutdown terminals on the NetWayM.

1. To enable PoE shutdown for one or more ports click on the **Enable** radio button(s) in the PoE shutdown column *(Fig. 5, pg. 7)*.
2. To disable PoE shutdown for one or more ports click on the **Disable** radio button(s) in the PoE shutdown column *(Fig. 5, pg. 7)*.
   Note: To enable or disable PoE shutdown for all ports click on corresponding link below PoE shutdown column.
3. Click **Submit** to save the changes or proceed with programming.

Power Allocation Mode:

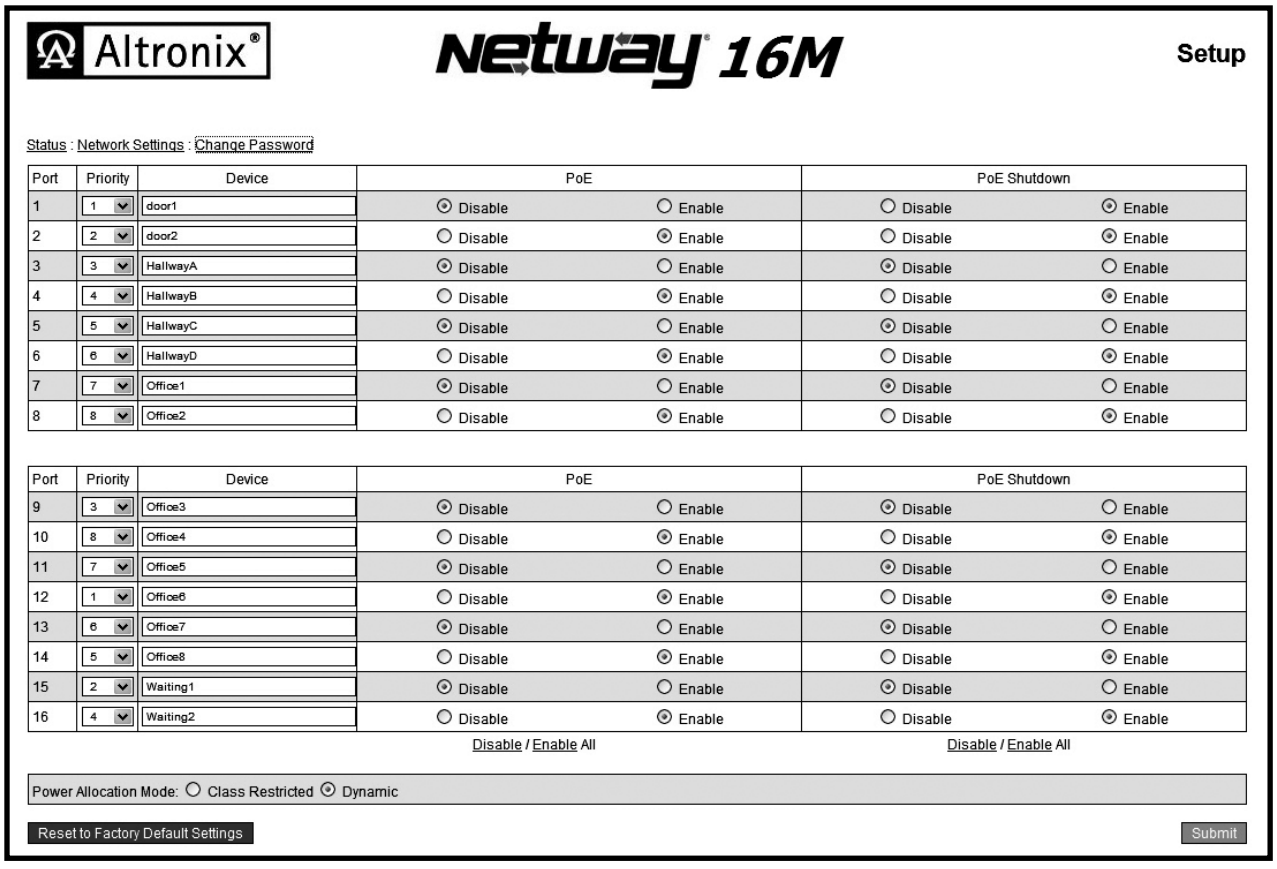
NetWayM features the ability to select how total power is allocated to the ports.

- **Class Restricted Power Mode** - each port will be allocated the maximum rated power that the PoE device will broadcast.
- **Dynamic Power Mode** - each port will supply the specific amount of power that the PoE device requires for operation.
  Note: Be sure not to exceed the total power NetWay8M/NetWay16M is rated at.

1. Click on the corresponding radio button to set the Power Mode desired *(Fig. 5, pg. 7)*.
2. Click **Submit** to save the changes or proceed with programming.

NetWay8M/NetWay16M Status Page

Fig. 5


Altronix
Netway 16M
Setup
Status : Network Settings : Change Password
Port | Priority | Device | PoE | PoE Shutdown
1 | 1 | door1 | Disable | Enable | Disable | Enable
2 | 2 | door2 | Disable | Enable | Disable | Enable
3 | 3 | HallwayA | Disable | Enable | Disable | Enable
4 | 4 | HallwayB | Disable | Enable | Disable | Enable
5 | 5 | HallwayC | Disable | Enable | Disable | Enable
6 | 6 | HallwayD | Disable | Enable | Disable | Enable
7 | 7 | Office1 | Disable | Enable | Disable | Enable
8 | 8 | Office2 | Disable | Enable | Disable | Enable
Port | Priority | Device | PoE | PoE Shutdown
9 | 3 | Office3 | Disable | Enable | Disable | Enable
10 | 8 | Office4 | Disable | Enable | Disable | Enable
11 | 7 | Office5 | Disable | Enable | Disable | Enable
12 | 1 | Office6 | Disable | Enable | Disable | Enable
13 | 6 | Office7 | Disable | Enable | Disable | Enable
14 | 5 | Office8 | Disable | Enable | Disable | Enable
15 | 2 | Waiting1 | Disable | Enable | Disable | Enable
16 | 4 | Waiting2 | Disable | Enable | Disable | Enable
Disable / Enable All
Disable / Enable All
Power Allocation Mode: Class Restricted Dynamic
Reset to Factory Default Settings
Submit

Setting Up Administrative Password

The administrative password options could be turned on to protect the unit from unwanted access to programming interface.

1. Click Setup link. Setup page will be displayed.
2. Click Change Password link. Change Password page will be displayed
3. Type the desired password into the New Password window.
4. Re-type same password into the Confirm New Password window.
5. Click Submit to save the changes.

Configuring NetWay8M/NetWay16M for network connection

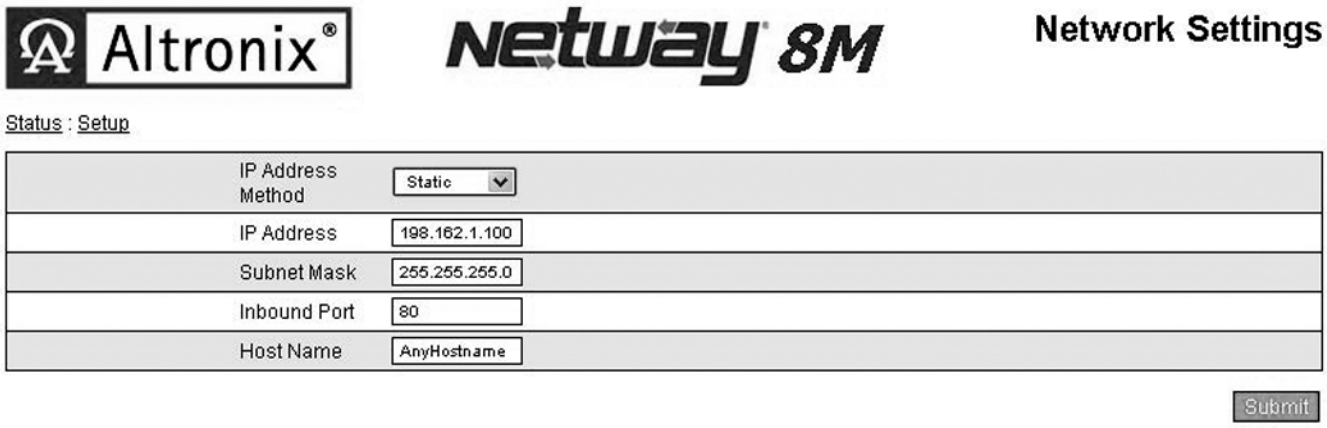
Since every Network Configuration is different, please check with your Network Administrator to see if your NetWay8M/ NetWay16M should use specific IP addresses and/or Inbound Port number prior to setting up the network connection.

1. Click Network Settings link.
   If you are prompted for an administrative password, type and submit the password.
   Note: Unit comes with administrative password option turned off.
2. Network Setup page will be displayed. You may now configure your NetWay8M/NetWay16M for network connection.

Fig. 6 - NETWORK SETTING MENU. This menu is for configuring the NetWay8M/NetWay16M units for a network connection.

Fig. 6 - Network Menu – LAN

Fig. 6



Network Type:

Static IP: User must set a fixed IP for network connection.
IP: This field shows the NetWay8M/NetWay16M current IP Address.
Subnet Mask: This field shows the subnet mask for your network so the NetWay8M/NetWay16M will be recognized within the network.
Inbound Port: Port number for HTTP/WEB communication.
Host Name: Name of the NetWay8M/NetWay16M device on the LAN.

Additional information:

1. You will need to input the information manually. In order for DDNS to work, you must enter valid data, compatible with your network, for all of the network setting fields: IP address, Subnet Mask, Inbound Port and Host Name.
2. If you are connecting through a router, make sure that you have 'opened up' all the required network ports in the port forwarding section of your router's setup options. That is, you have directed the router to send any incoming traffic using those IP ports to the LAN IP address of the NetWay8M/NetWay16M. Useful information about router port forwarding can be found at www.portforward.com . Different routers may use different terms for port forwarding function. For instance, D-Link calls it virtual server, Netopia calls it pinholes.

Additional information (cont'd):

The default port for NetWay8M/NetWay16M is: 80

Note: Port 80 is the default port used for web browsing. Because of this, in order to prevent the average user from hosting a web server, most ISPs BLOCK traffic using port 80 from reaching the average site. If you only plan to monitor your NetWay8/NetWay16M on a LAN, you can use port 80, and don't have to concern yourself with routers. However, if you desire remote access to your NetWay8M/NetWay16M, you MUST select functional ports and set up the port forwarding in your router. Other ports, such as 8080 and 8000 are sometimes blocked by ISPs as well. What port(s) should be used? There are 65,535 valid IP ports to choose from. These are broken down into three groups:

- Well Known Ports 0 thru 1023
- Registered Ports 1024 thru 49151
- Dynamic and/or Private Ports 49152 thru 65535

So, rather than encounter a port conflict by choosing a port commonly used for another purpose (like port 25 for SMTP mail or port 448 for secure sockets), choose an 'unusual' port number. For example, add 50,000 to your house number: 50,123 is less likely to lead to a port conflict. For a list of the known and registered ports, see http://www.iana.org/assignments/port-numbers

Reset Features:

Reset Password:

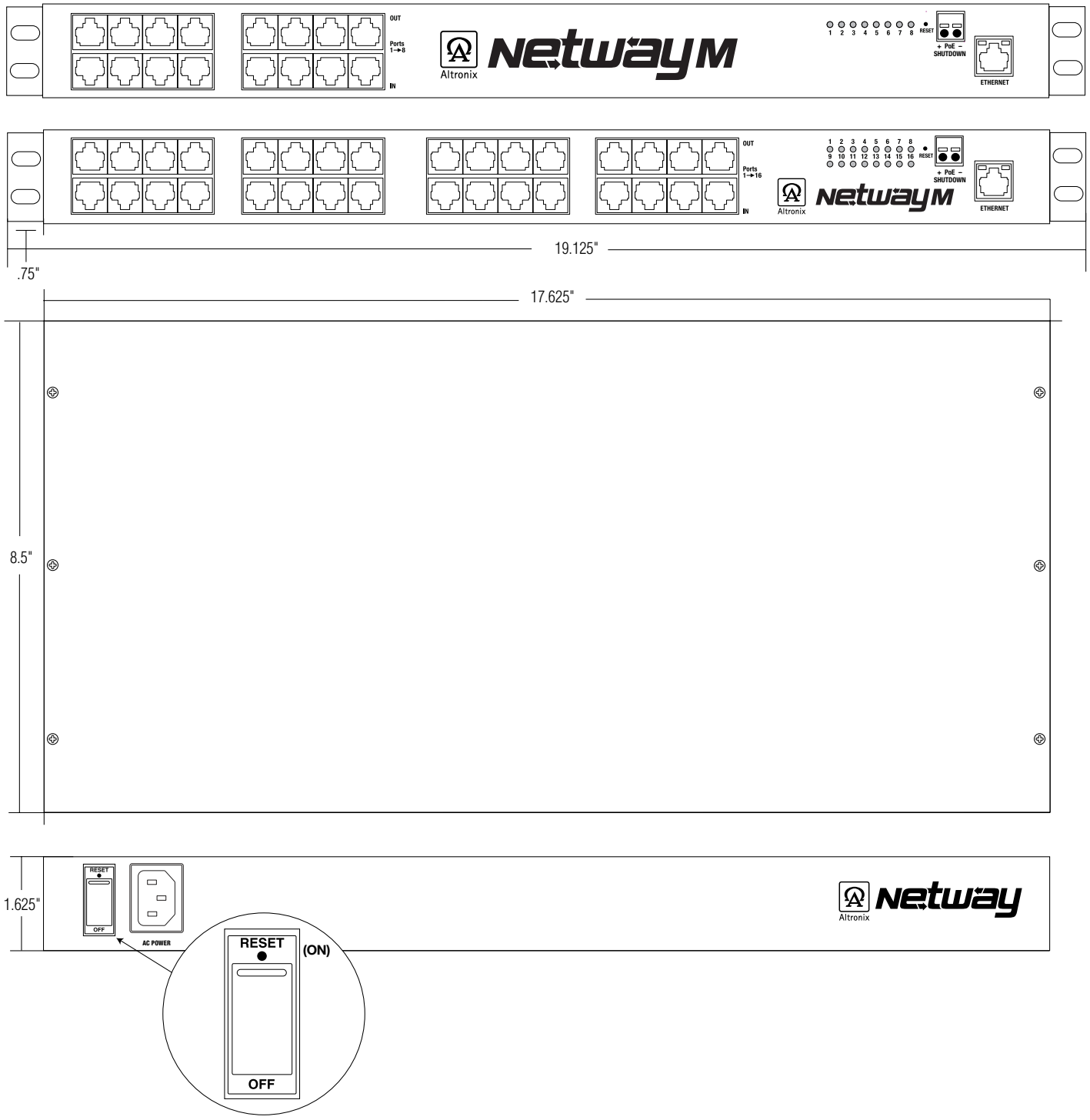
1. Set illuminated master power disconnect circuit breaker to the (OFF) position *(Fig. 1g, pg. 3)*.
2. Set illuminated master power disconnect circuit breaker to the RESET (ON) position *(Fig. 1g, pg. 3)* while depressing the [RESET button] on the front of the NetWayM *(Fig. 1d, pg. 3)*.
3. NetWayM status LEDs will display a flashing pattern which indicates reset was successful *(Fig. 1c, pg. 3)*.

Reset IP to Factory Settings:

1. During normal operation depress the [RESET button] on the front of the NetWayM for approximately 1 second *(Fig. 1d, pg. 3)*.
2. NetWayM status LEDs will display a flashing pattern which indicates reset was successful *(Fig. 1c, pg. 3)*.
3. Factory settings are: DHCP server and the IP address is [192.168.1.1].

NetWay8M/NetWay16M Rack Mount Chassis Mechanical Drawing & Dimensions:

Fig. 7



The lightning flash with arrow head symbol within an equilateral triangle is intended to alert the user to the presence of an insulated "DANGEROUS VOLTAGE" within the products enclosure that may be of sufficient magnitude to constitute an electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: To reduce the risk of electric shock do not open enclosure. There are no user serviceable parts inside. Refer servicing to qualified service personnel.

Mounting Options:

Rack Mount Installation

1- Remove and discard factory installed screws from both sides of rack chassis *(Fig. 8a)*.
2- Install mounting brackets (A) on the left and right side of rack chassis using the four (4) flat head screws (B) (included) *(Fig. 8b)*.
3- Place unit into desired EIA 19" rack position and secure with mounting screws *(not included) (Fig. 8c)*.

Fig. 8

Fig. 8a

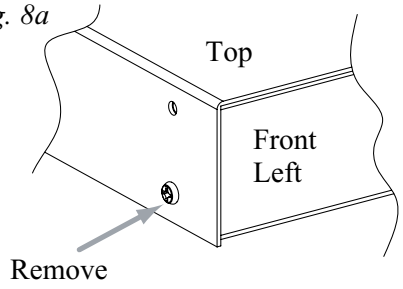


Fig. 8b

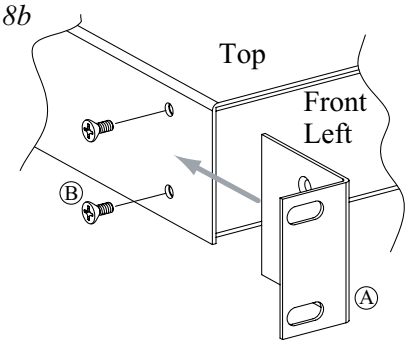
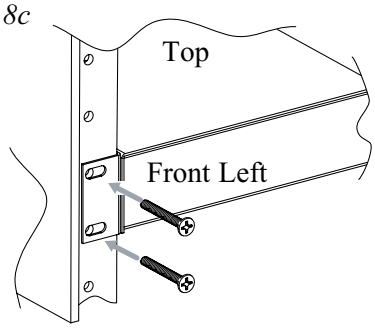


Fig. 8c



Wall Mount Installation

1- Install mounting brackets (A) on the left and right side of rack chassis using four (4) flat head screws (B) (included) *(Fig. 9a)*.
2- Place unit at desired location and secure with mounting screws *(not included) (Fig. 9b)*.
Caution: It is necessary to make sure mounting screws are securely fastened to a beam when installing the unit vertically.

Fig. 9

Fig. 9a

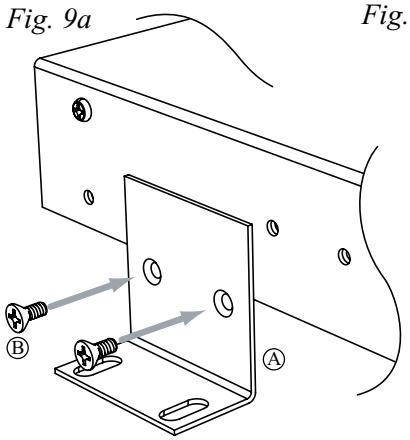
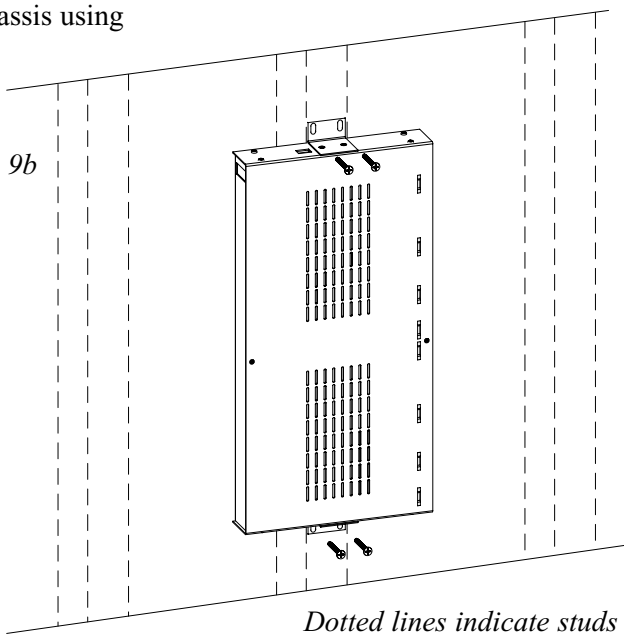


Fig. 9b

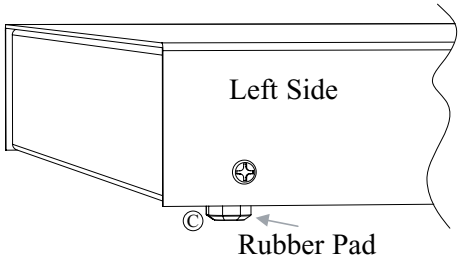


Dotted lines indicate studs behind sheetrock.

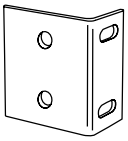
Shelf Installation

1- Position and affix rubber pads (C) (included) at each corner on the bottom of the unit *(Fig. 10)*.
2- Place unit in desired location.

Fig. 10



Mounting Hardware *(Included):*



Ⓐ Two (2) mounting brackets

Ⓑ Six (6) flat head screws for mounting brackets.

Ⓒ Four (4) rubber pads.

Notes:

Altronix is not responsible for any typographical errors. Product specifications are subject to change without notice.

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